The frame is bolted direct to the cylinder by a heavy flange, which is connected to the cylindrical part of the frame by a sweeping curve. The guides are usually of the bored type, or if flat, are loose and rest upon a bored seat. The forked part of the frame carries the main bearings, and is continued well back along the cylindrical part on both sides. In large engines these parts are sometimes separate castings and are joined together by a heavy flange connection. The end of the frame projects well beyond the bearings and rests on the foundations along the whole length, so that rigidity in all directions is well secured.

The main bearings are usually of the four-part type with wedge adjustment and are lined with white metal. Messrs. Robey & Co., of Lincoln, make a special design in which the back of the wedge is circular, or forms

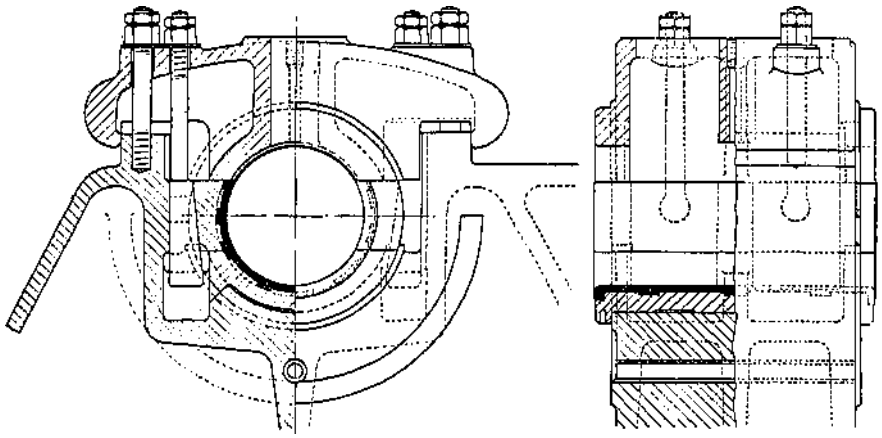

Fig. ii.—A Typical Design of Main Bearing

part of a cylinder, the inner side being, of course, inclined. This construction ensures an equable adjustment throughout the width of the wedge. This design is shown in figs. 9 and 10. A usual .design is illustrated in fig. ii. The bearings are of cast iron lined with white metal as shown.

The pressure on the main bearings should be not more than 200 to 250 Ib. per square inch due to the combined dead load and the steam pressure.

The thickness of metal in the frames is usually based upon manufacturing considerations, and the necessity for securing stiffness, but no part in tension should be stressed to a higher figure than 600 to 800 Ib. per square inch.

The bolts or studs attaching the frame to the cylinder are usually greater in diameter than the cylinder cover studs, and a stress of 3000 to 4000 Ib. per square inch at the bottom of the thread is allowed.

Piston-rod.—The design of the piston-rod is on similar lines to that in other classes of engine. A taper part of i in 4, and a parallel part with screw and nut, forms the attachment to the piston. Some makers adopt a taper of i in 3 on the diameter with a collar on the rod which really takes the thrust, the cone merely facilitating the withdrawal of the rod. A stress